

Weekly Report

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2LSS analysis

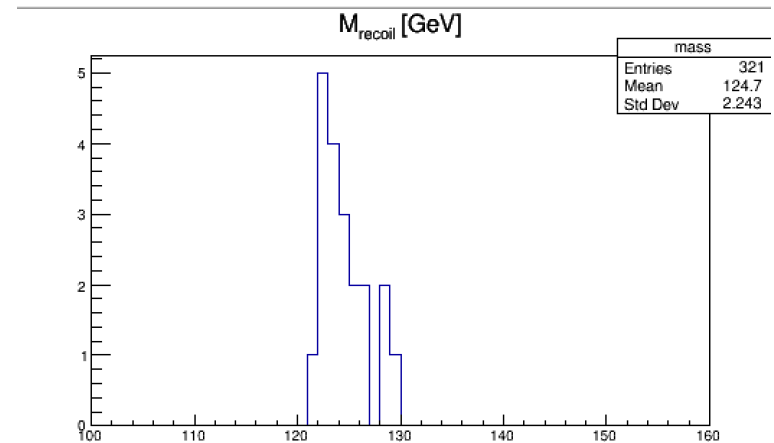
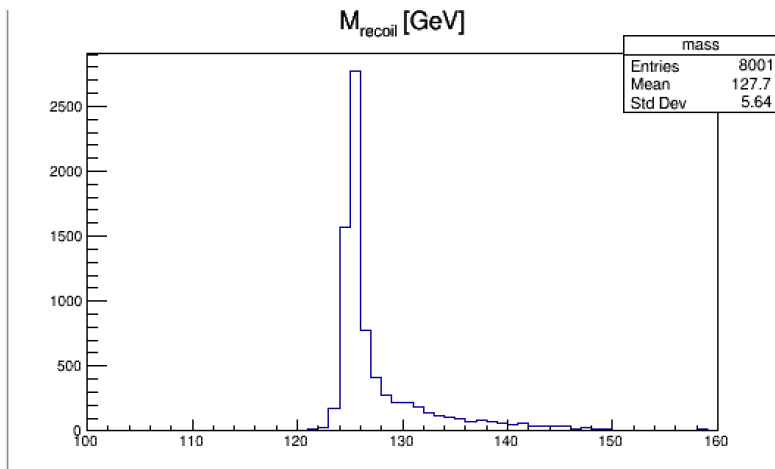
- Fixed Xsec issue
- BDT output: needed update
- Preliminary results have been done
 - Expected upper limits: set to 105 times SM cross section
- Further improvements:
 - New method to estimate fake backgrounds: Template fit?
 - MVA tech(have attempt based on fake factor method but not perfect)

Signal samples production

- Process: $pp \rightarrow H \rightarrow Sh, h \rightarrow \gamma\gamma$
- Generator: Pythia8
- Two ways:
 - 1) Produced events within Athena
EVET file -> truth DAOD
->simu, reo->DAOD
didn't transform those DAOD to Ntuples yet.
 - 2) Pythia8+**Delphes** standalone (will be present choice)

Intro to *Delphes*

- C++ framework, performing a fast multipurpose detector response simulation.
- Try it with CEPC detector
- Process : $ee \rightarrow ZH, Z \rightarrow \mu\mu$ @240GeV , 10000evts



Recoil mass: $(240\text{GeV} - p_{t,\mu\mu}) \cdot M$

Inv mass of $\gamma\gamma$

Why Not symmetry? Need check carefully

- Default cepec geo set:

example: Resolution of Ecal: $\sqrt{E^2 * 0.005^2 + E * 0.2^2}$